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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,253	07/03/2003	Pieter G. Einthoven	02-0889/011563(BOE 0350 P	4882
7590	06/17/2005		EXAMINER	
John A. Artz Artz & Artz, P.C. Suite 250 28333 Telegraph Road Southfield, MI 48034			TO, TUAN C	
			ART UNIT	PAPER NUMBER
			3663	
DATE MAILED: 06/17/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/613,253

Applicant(s)

EINTHOVEN ET AL.

Examiner

Tuan C To

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-69 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 50 is objected to because of the following informalities: the preamble of claim 50 states "a method as in claim 96", however, claim 96 is not an existing claim. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 1-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mezan (US 6622065B2) and in view of Rollet et al. (US 5863012A).

With respect to claims 1, and 15-69, Mezan discloses a flight control system for an aircraft, particularly for a helicopter, in which there is a control for controlling the pitch and roll attitude about the relevant axis of the aircraft (Mezan, column 1, lines 31-36). Mezan also teaches that there is at least one control member, which is stick or mini-stick capable of being actuated by a pilot of the aircraft, and that said stick is provided to control the pitch and roll attitude of an aircraft. Thus, the teachings of Mezan read on the limitation "determining a vertical inceptor position required to maintain a vertical state" as claimed.

Mezan does not disclose: "determining minimum and maximum allowable vertical inceptor position limits for desired operation of the vehicle".

Rollet et al. disclose a cyclic stick system for a helicopter, in which the cyclic stick is pushed or pulled at forces so that to accelerate or decelerate and then maintain a new higher or lower speed. Thus, Rollet et al. inherently disclose the minimum and maximum of the inceptor position limits in order to accelerate or to decelerate the aircraft.

Hence, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Mezan to include the teachings as taught by Rollet et al. in order to enhance aerodynamic balancing surface for an aircraft, particularly for a helicopter during the vertical state.

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With regard to claim 2, Mezan teaches that the pitch and roll attitude are determined by a control member, which is stick or mini-stick. The attitude limits are also disclosed in Rollet et al.

With regard to claim 3, Rollet et al disclose that cyclic stick system for a helicopter, in which cyclic stick is pushed or pulled at forces so that to accelerate or decelerate and then maintain a new higher or lower speed. Thus, Rollet et al. inherently disclose the prediction of increasing or decreasing in pitch and roll attitude limits.

With regard to claim 4, Mezan discloses that "limits are represented as control inceptor position limits on said longitudinal and lateral axes" (see column 1, lines 31-36).

With regard to claim 5, Mezan discloses that "limits are provided as tactile cues" (see column 1, lines 31-36).

With regard to claim 6, Mezan discloses that "limits are provided through an active force cueing system (Mezan, column 1, lines 25-55).

With regard to claim 7, Mezan discloses that "limits are cued through a tactile cueing system (Mezan, column 1, lines 25-55).

With regard to claim 9, Mezan do not mention that that said limits are based on the transfer of potential and kinetic energy. However, such feature is inherently disclosed in Mezan.

With regard to claim 10, as discussed above, a cyclic stick system for a helicopter as taught of Rollet et al, and that the cyclic stick is pushed or pulled at forces so that to accelerate or decelerate and then maintain a new higher or lower speed. As

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a result, the vertical velocity would be changed. Thus, Rollet et al. inherently disclose that "said limits are based on the potential change in vertical velocity".

With regard to claim 11, as represented herein above, Mezan discloses that "limits are represented as control inceptor position limits on said longitudinal and lateral axes" (see column 1, lines 31-36). Mezan also discloses that "limits are provided as tactile cues" (see column 1, lines 31-36). Thus, said limits are determined using at least two methods, and the most restrictive result from the two methods are utilized.

With regard to claims 12-14, as taught in Rollet et al, the cyclic stick system is provided to maintain the stability for the helicopter in vertical in terms of forces on the cyclic stick so that accelerate (or decelerate) and maintain a new higher (or lower) speed. Thus, Rollet et al. inherently disclose constant vertical altitude, constant vertical velocity, and constant flight path angle so that the stability of the helicopter in vertical is maintained.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mezan (US 6622065B2), Rollet et al. (US 5863012A), and further in view of Tomio et al. (US 6334592B1).

With regard to claim 8, the combination of Mezan and Rollet et al, as represented herein, addresses the limitations of claim 1 except for said limits that are provided to a software limiting system.

The reference to Tomio et al. has been cited as teaching a flight control apparatus for helicopter that includes the teachings of SAS (stability augmentation system) as to be identical to the software limiting system as claimed by the applicant.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Mezan, Rollet et al, and Tomio et al. to improve the control characteristics of the helicopter and reduce the cross coupling between the longitudinal and lateral axes.

Conclusions

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan C To whose telephone number is (571) 272-6985. The examiner can normally be reached on from 8:00AM to 5:00PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/tc

June 8, 2005


THOMAS G. BLACK
SUPERVISORY PATENT EXAMINER
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